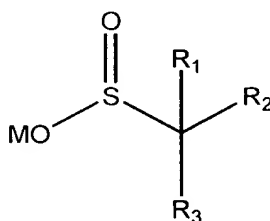


CLAIMS

What is claimed is:

1. In a vinyl acetate based polymer based emulsion formed by the polymerization of vinyl acetate and N-methylolacrylamide, optionally other monomers, in the presence of a stabilizing system and a redox catalyst system comprised of an oxidizing agent and a reducing agent, the improvement for reducing formaldehyde emissions in the emulsion, which comprises:

forming said vinyl acetate based polymer emulsion utilizing as the reducing component of the redox catalyst system a reducing agent of the formula:



where M is a hydrogen atom, an ammonium atom or a monovalent metal ion, R₁ is OH or NR₄R₅ wherein R₄ and R₅ each are H or C₁-C₆ alkyl; R₂ is H or an alkyl, alkenyl, cycloalkyl or aryl and the like, and R₃ is CO₂M.

2. The vinyl acetate polymer based emulsion of Claim 1 in which the vinyl acetate polymer-based emulsion comprises ethylene in an amount of from about 10 to 40% by weight of the polymer.

3. The vinyl acetate polymer based emulsion of Claim 2 wherein the N-methylolacrylamide is present in an amount of from about 0.5 to 10% by weight of the polymer.

Sub A3
cont:

4. The vinyl acetate polymer based emulsion of Claim 3 wherein the reducing agent represented by the formula is selected from the group consisting of: 2-hydroxyphenyl hydroxymethyl sulfinic acid-sodium salt; 4-methoxyphenyl hydroxymethyl sulfinic acid-sodium salt; 2-hydroxy-2-sulfinato acetic acid-disodium salt;
- 5 2-hydroxy-2-sulfinato acetic acid-zinc salt; 2-hydroxy-2-sulfinato propionic acid-disodium salt; ethyl 2-hydroxy-2-sulfinato propionate-sodium salt.
5. The vinyl acetate polymer based emulsion of Claim 4 wherein the vinyl acetate-based emulsion polymer is formed using a redox catalytic system of hydrophobic
- 10 hydroperoxide and the glycolic acid adduct of sodium sulfonate.
6. The vinyl acetate polymer based emulsion of Claim 3 wherein M is sodium or zinc.
- 15 7. The vinyl acetate polymer based emulsion of Claim 3 wherein R₁ is OH.

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